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ABSTRACT

Ecological assessment models for handicapped students are described and guidelines are offered for using the models in the assessment process. Information is broken down to separate environments: within the child, within the school, and within the home. Within-child factors to be assessed include medical, academic, cognitive, and affective deficiencies. Within-school influences may be assessed through a variety of measures, including analysis of facilities, personnel, tasks, climate, and curricula. Within-school factors include teacher-student relationships and peer interactions. Problems of ecological assessment within the home are noted, such as ethical concerns which prevent the assessment of parental and sibling interactions. (CL)

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THE NEED FOR AN ECOLOGICAL
ASSESSMENT OF THE EXCEPTIONAL STUDENT

Paper Presented at Council for Exceptional Children Convention

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Most assessment techniques for identifying exceptional students concentrate on deficits and strengths within the child. Although the use of formal procedures with high validity coupled with informal measures can improve both the effectiveness and efficiency of decision making, psychoeducational assessment is insufficient in itself to identify students and plan their interventions (Adelman, 1983). Clearly, special educators must expand their concept of assessment data in order to have a foundation for diagnostic-prescriptive teaching. An ecological paradigm provides a total approach to assessment which can then be translated into an ecological or total intervention. The strengths of this paradigm compel those who attempt to identify exceptional students to assess the ecology of the learner as the characteristics of the learner.

Ecological theory stresses both the organism and the environment and focuses on their interactions. Smith, Neisworth, & Greer (1978) state, "Virtually all human traits result from active reciprocity between biologic and environmental variables. Questions regarding which is more important become somewhat irrelevant. Any performance is a product of the interchange of heredity, history, and situational determinants" (p.7).

Students are continually responding to a series of situational factors that may or may not be apparent to the casual observer. Wallace and Larsen (1979) state,

"Such variables as peer pressure, teacher and parent demands, school climate, and the child's own self concept all have the potential to either positively or negatively influence a child's academic and social behavior. It is logical that analysis of an underachieving or misbehaving child in relation to the environment(s) directly affecting this behavior may yield for the teacher considerable data regarding the nature of an observed problem, as well as suggest remedial strategies that may lead to its eventual amelioration" (p.99).

Examination of available models for ecological assessment reveals commonalities among these guides to the assessment process. Two models are described in detail, followed by a discussion organized under the separate, but related, environments incorporated into these models-- 1) within the child; 2) within the school; and 3) within the home. Each of these parts will be discussed with research supporting the importance of assessing each component. An appendix will list specific procedures and instruments for assessing environments and person-environment interactions.

Assesment Models

Several models for evological assessment have been proposed. Educators need these conceptual models to guide them in this assessment process. Laten and Katz (1975) have developed a five phase approach:

1. Initial descriptions of the environment
 - A. Perceptions of the problem
 - B. Information from the setting(s) in which the problem is most noticeable

Information from the setting(s) in which the problem is not noticeable.

2. Expectations

A. Information from the environments in which the child is experiencing problems.

B. Information from the environments in which the child is not having problems.

3. Behavioral descriptions

A. Interactions and skills of the people involved in problematic situations.

B. Interactions and skills of the people involved in successful situations.

C. Skills needed by the child to function successfully in different environments.

4. Data are summarized.

5. Reasonable expectations are set.

Carroll (1974) has proposed a simple six-step system for conducting an ecological assessment:

1. Determine the goal of assessing the learner and his environment.
2. Develop a conceptual model for assessing the learner and his environment.
3. Implement the assessment plan based upon the above concept and model.
4. Evaluate the results of step 3 and determine the primary learner goals.
5. Develop a set of hypotheses about the student's learning and emotional characteristics.

6. Develop a learning plan based upon step 5, the learner characteristics and the learning environment.

Both of these models are similar to the theory of learning espoused by Hunt (1972). He suggested that adaptive growth takes place only in situations which contain information, models, and challenges just discrepant enough from those already stored and mastered. "An appropriate match for successful learning is one where there is an accountable discrepancy between one's adaptive assimilated schemata and the environmental circumstances one encounters" (Carroll, 1971, p. 2).

In contrast, the absence of the discrepancy between one's environmental circumstances and one's adaptive assimilated schemata is viewed as resulting in arrested learning (Adelman, 1973). Any environment the child may inhabit and interact with can contain factors which can result in inappropriate or disruptive learning. The absence of a favorable match between student and environment may result in a state of disequilibrium on the part of both the teacher and the learner (Carroll, 1974).

Assessing the Uniqueness of the Child

Several factors within the child need to be addressed as potential roadblocks for learning. Medical, academic, cognitive and affective deficiencies might account for poor classroom performance. The increased use of pharmaceutical interventions for learning and behavior-disordered students compel

teachers to be aware of the effect(s) of any medications students take regularly (Heron & Heward, 1982). It is not unusual for a learning disabled student's behavior to alter dramatically when medication wears off or dosage is changed. "Ecological assessment of conditions within the child also implies the use of a variety of informal techniques and a deviation from some of the traditional ways of using instruments which emphasize normative data" (Hardin, 1978, p. 16).

Academic deficits can be assessed through diagnostic teaching practices. Informal probes can serve as an integral part of an ecological assessment. Assessment is only complete when educators delve into how a child learns as well as what has been learned. Learning style inventories can elicit important information before planning appropriate intervention strategies.

Cognitive and affective functioning within the child must be assessed. Moran (1978) stated that although thinking strategies and emotional status are separate factors, they interact to some extent which allows educators to interpret personality characteristics and feeling states from tests which measure intellectual functioning. Sherif and Sherif (1969) have stated that assessing cognitive aspects of the child are important because norms have been established within one's cognitive structure around which the learner evaluates incoming information to see if he can tolerate it. If he cannot, he will reject it or let it lie dormant as a noncommitment.

Assessing Influences Within the School

Assessment of the many interactions within the school is a complex task. Carroll (1974) presented the following comprehensive framework for assessing the learning environment:

Facility Analysis

Personnel Analysis

Process Analysis (input-response-reinforcement)

Task Analysis

Curriculum Analysis

Climate Analysis

Time Analysis

Group Analysis

Data Analysis (how, what, when and by whom data
is recorded)

Resource Analysis

Each analysis within this framework is completed by answering a series of questions while observing the child, the teacher, and the classroom itself. These global questions can serve as a start in evaluating the ecology of the school and its effect upon the learner. Evaluators can then assess more specifically the physical aspects of the classroom environment, student-student interactions, and teacher-student interactions.

Several studies have shown the importance of the physical aspects of the school environment. O'Leary and O'Leary (1977) found that a simple adjustment in the amount of space per student could be as effective as implementation of a contin-

gency management plan for increasing student on-task behavior. Axelrod, Hall, and Tam (1972) showed that off-task behavior can be reduced if students are seated in rows rather than cluster settings. Changes in classroom lighting (Mayron, Ott, Natijons, and Mayron, 1974) and noise reduction (Bronzaft & McCarthy, 1975) can have positive effects on student performance. Zentall (1983) made a strong case for evaluating the environment within the classroom:

Because the school is a primary environment for children, but one over which they have little control, it is important that classrooms have positive effects on children's desire to stay, work, explore, and interact with others. Those who argue for one constant school environment may be arguing that an unpreferred environment be used for the performance of unpreferred tasks. Such contexts will require a disproportionate reliance on punishment and reward, especially for learning and behavior disordered children. (p. 109)

Student-student (peer) interactions are an integral part of an ecological assessment. Many exceptional students, especially those mainstreamed into regular classroom settings for parts of each day, have low self concept. Hardin (1978) stated, "Since this desire for acceptance is so potent, interactions among the peer culture must be studied and modified when necessary for the affective development

of the exceptional student. The more accurate the understanding of a child's social situation, the more likely intervention will be effective: (p. 19). Sociograms, interest inventories and reaction inventories can provide important information about the student's interactions with his peer group.

Assessing teacher-student relationships involves observing both the quality and quantity of interactions. Research has shown that teachers act differentially toward the students in their classrooms. Brophy and Good (1974) found that high achieving students were praised significantly more often, criticized less, and that teachers were more persistent when seeking responses to questions from them. That is, the high achievers were given clues and the questions were rephrased, while in contrast the low achievers were given the answer and another student was called on. Bryan (1978) found that even though teachers responded to both disabled students and their non-disabled peers in equal time intervals, the disabled students received twice as much criticism. Clearly, amount of time does not equate to quality time.

Teachers have control over a multitude of variables within the classroom--curriculum, instructional techniques, scheduling, reinforcers, and punishers. A teacher's style can hinder or facilitate the potential for learning within a classroom. Insel and Moos (1974) stated, "Just as it is possible to assess persons, environments can be similarly portrayed with a great deal of accuracy and detail. Some

people are supportive; likewise, some environments are supportive. Some people feel the need to control others; similarly, some environments are extremely controlling. Order and structure are important to many people; correspondingly, many environments emphasize regularly, system and order" (p. 179).

Hardin (1978) stressed the importance of all influences within the classroom. "Assessment of classroom variables, even if somewhat subjective and difficult, can lead to a recognition of classroom dynamics. Even though recognition alone does not necessarily lead to intervention and change, intervention cannot occur without such recognition" (p. 19).

Assessing Influences Within the Home

The home can have the single greatest influence on a child's learning but special problems in collecting these data exist in this phase of ecological assessment. Parental expectations, parental awareness of the child's academic and personal needs, and the nature of the child's interactions with siblings are important variables to assess. Crisis situations such as death in the family, child abuse or neglect, or parental divorce can have profound effects upon the learner. The child's reactions to these crisis offer the educator important clues to classroom behavior.

Ethical concerns can prevent educators from even attempting an ecological assessment within the home. Even if permission is granted from the parents for an ecological assessment, educators are often reticent to conduct one

because educators have so little control over variables within the home. This phase of the ecological assessment is often overlooked or omitted although it can give important information for intervention planning.

Conclusions

Currently, many authorities (Lerner, 1981; Giaconia & Hedges, 1982; Mercer, 1983; Zentall, 1983) support an approach recognizing both organism and environment. They stress that reliance on such assessment components as deficits and strengths of the learner, task analysis non-academic variables, class and home environment cannot be interpreted accurately in isolation.

Ysseldyke (1983), in reviewing the findings of the Minnesota Institute for Research on Learning Disabilities, concluded there was a need for adopting an ecological model of student's learning and behavioral problems in educational settings. "Current research demonstrates that teachers attribute school problems to internal child causes. Student learning and behavior problems are more appropriately viewed from an ecological perspective that considers the contribution of child variables, home variables, classroom variables, and instructional variables to a student's problem. The adoption of an ecological perspective in assessing student problems would lead to more ecologically sound and instructionally relevant interventions" (p. 88).

Hardin (1979) has prodded the educational community by stating, "Almost every aspect of today's world is concerned

with ecology except the learning environment; yet, few professionals would question the need for such an approach to learning. The rationale is both accepted and applauded but, unfortunately, it is rarely practiced" (p. 15). Special education assessment techniques need to be refined and expanded. In order to see the total child and the total environment, the identification of exceptional students should be based on an ecological assessment.

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